REMARKS

The above-identified patent application has been reviewed in light of the Office Action dated May 6, 2003. In the amendments set forth above, Claims 7 and 8 have been amended without abandoning or intending to dedicate to the public any patentable subject matter. Accordingly, following entry of the present amendment, Claims 7-12 will be pending in the present application. For the reasons set forth below, the rejections of Claims 7-12 are respectfully traversed. Accordingly, reconsideration and withdrawal of the rejections of Claims 7-12 are respectfully requested.

Claims 7-12 stand rejection under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,548,132 to Batra et al. (hereinafter "Batra") in view of U.S. Patent No. 5,793,460 to Yang (hereinafter "Yang"). In order to establish a *prima facie* case of obviousness under 35 U.S.C. §103, there must be some suggestion or motivation to modify the reference, there must be a reasonable probability of success, and the reference must teach or suggest all of the claim limitations. (MPEP §2143). As described more fully below, Applicants submit that the cited references do not teach, suggest or disclose a bottom gate thin film transistor in which the grain size of the source and the drain is greater than the grain size of the channel, and in which the gate is formed from a refractory metal which has a higher thermal conductivity than an insulating substrate and is operable to dissipate energy received at portions the polycrystalline silicon film adjacent to the gate to produce grain sizes in the source and drain which are greater than the grain size of the channel. Therefore, the rejection of Claims 7-12 should be reconsidered and withdrawn.

The claimed invention is generally directed to thin film transistors (TFT). In particular, a TFT in accordance with the now pending claims has a bottom gate structure and includes a polycrystalline silicon film in which a channel, a drain and a source are defined. Furthermore, the grain sizes of the drain and the source are greater than a grain size of the channel. (See Independent Claims 7 and 8). In addition, as set forth in the amendments to Claim 7 and 8, the gate of a transistor as claimed is formed from a refractory metal which has a higher thermal conductivity than the insulator substrate and is operable to dissipate energy received at the polycrystalline silicon film adjacent to the gate to produce grain sizes in the channel region which are smaller than grain sizes of the source and drain regions.

Batra is generally directed to a thin film transistor with reduced leakage current. (Batra, col. 3, ll. 18-20). With respect to a bottom gated thin film transistor, Batra discusses a device that includes a TFT gate 54. (Batra, col. 5, l. 65 to col. 6, l. 1). However, Batra does not teach, suggest or disclose a gate formed from a refractory metal. Instead, with respect to a top-gated transistor, Batra discusses a gate 24 formed from a patterned layer of n+ doped polysilicon. (Batra, col. 4, ll. 54-58). With respect to a bottom-gated transistor, Batra simply describes an "overlaying TFT gate 54 and adjacent insulating oxide regions 56." (Batra, col. 5, l. 67 to col. 6, l. 1). The Examiner cites to Yang for a refractory metal gate electrode, and asserts that it would be obvious to combine the references to produce the claimed invention. However, Yang simply refers to a TFT which may have a refractory metal gate. Applicants submit that there is no teaching, suggestion, or motivation in any of the cited references, alone or in combination, of providing a refractory metal gate in a bottom gate TFT which is operable to dissipate energy received at a polycrystalline layer to produce the claimed

grain sizes. Therefore, for at least these reasons, the cited references do not teach, suggest or disclose a gate formed from a refractory metal, as variously recited by the claims. Accordingly, the rejections of the claims as obvious in view of Batra and Yang should be reconsidered and withdrawn.

It is submitted that the application is now in form for allowance. Therefore, early notification of same is respectfully requested. The Examiner is invited to contact the undersigned by telephone if doing so would expedite the resolution of this case.

Respectfully submitted,

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